



Nortel IVR 2.5/S

North American ISDN PRI Guide

Product release 2.5/S

Standard 1.0

July 1997

NORTEL
NORTHERN TELECOM

Nortel IVR 2.5/S

North American ISDN PRI Guide

Product release: 2.5/S
Document release: Standard 1.0
Date: July 1997

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Printed in the United States of America

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Publication history

July 1997

Standard 1.0 release of the *North American ISDN PRI Guide* for Nortel IVR 2.5/S.

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Chapter 1: Introduction

The North American ISDN PRI option adds ISDN Primary Rate Interface functionality to the MRS/Tower, MRS/Rack, and MRS/AP systems. This signaling option allows communication with common telephony switches supported in North America. The North American ISDN PRI option includes the following media:

Table 1-1: North American ISDN PRI option media

Diskette name	Number of disks
MRS Version 3.02.01 ISDN Base Package #1 For Unix SVR 3.2	1
MRS Version 3.02.00 PRI ISDN Signaling Option	1
MRS Version 3.02 PRI ISDN NTT Protocol	1
MRS Version 3.02 PRI ISDN DMS Protocol	1
MRS Version 3.02 PRI ISDN 4ESS Protocol	1
MRS Version 3.02 PRI ISDN 5ESS Protocol	1

Note: The 4ESS and 5ESS are AT&T switches. The DMS is a Nortel switch. The NTT protocol is for the NTT INS1500 switch.

This document includes:

- system hardware and software requirements
- a brief description of the option's features
- option installation procedures

1-2 Introduction

Appendix A describes how to connect to the MRS system and log in to the Service Console Interface (SCI). Appendix B lists the option's hardware module configuration settings.

Chapter 2: System requirements

The base Nortel IVR 2.5/S system already includes the system requirements listed here, with the exception of the D/240SC-T1 board, for installing and using the North American ISDN PRI option update for MRS 3.02.02. Specifically, these requirements are:

- MRS 3.02.02 Base Package
- at least 32 Mbytes of memory and 128 Mbytes of cache memory
- the Dialogic D/240SC-T1 board Revision 1 or higher
- SCO UNIX 3.2v4.2
- 486 CPU with 66 MHz processor

Chapter 3: North American ISDN PRI option features

This chapter presents a brief overview of

- the North American ISDN PRI option hardware
- supported switches
- supported features

An overview of the North American ISDN PRI option hardware

The North American ISDN PRI option supports the ISDN Primary Rate Interface based on the Dialogic D/240SC-T1 module. This T1 interface supports 24 ports with a total data rate of 1.544 megabits/second: 23 B channels to handle data and 1 D channel for signaling. The ISDN Primary Rate Interface (PRI) Access firmware supports the following features:

- ISDN Primary Rate connectivity is supported between an ISDN switch and up to 48 channels on an MRS, or 96 channels on an MRS/AP.
- Downloadable software algorithms are loaded into firmware to yield complete 24-port voice processing (that is, 23 ports for data channels per board) plus PRI access in a single slot.
- Dialed Number Identification Service (DNIS) enables the application to automatically identify the dialed phone number.
- Automatic Number Identification (ANI) enables your application to identify the calling party.
- The ANI-on-Demand feature saves money by selectively requesting ANI information only when needed.
- ISDN offers inherent benefits to call center applications with its fast call setup and fast retrieval of DNIS and ANI information on inbound calls.

Supported switches and features

The North American ISDN PRI option supports AT&T 4ESS, AT&T 5ESS, Nortel DMS/250, DMS/100, and NTT INS1500 switches, in addition to direct network termination. This option has several parameters that you can configure for your particular environment:

Switch Type

Valid values are 4ESS, 5ESS, DMS, and NTT.

Default: 4ESS

This parameter sets the switch emulation.

Transfer Capability

Valid values are speech, 3.1 KHzAudio, udigital, rdigital, 7 KHzAudio, and video.

Default: speech

This parameter sets the type of data to be transferred. The choices are described here:

- “speech” and “3.1 KHzAudio” both describe a transfer capability using a single voice-grade channel. The reason for distinguishing between the two services is that it may be cost-effective for the network to use compression and encoding techniques that are appropriate only for human speech. Non-speech applications in the voiceband (for example, modem) may use the bandwidth in a more uniform and/or less predictable fashion than voice, and might be rendered useless if the signal is altered using voice compression techniques.
- Udigital (Unrestricted Digital) is a 64-kbps bit stream where all-zero octets are permitted.
- Rdigital (Restricted Digital) is a 64-kbps bit stream where all-zero octets are not permitted.
- 7 KHzAudio provides high quality speech.
- Video service is for visual information transfer.

Transfer Mode

Valid values are circuit and packet.

Default: circuit

This parameter sets the mode for transferring data.

Circuit mode is analogous to connection over the circuit switched network. It provides a dedicated end-to-end connection for delay-sensitive applications, such as voice, audio, and video.

Packet mode is useful for applications not running in real time that send unrestricted or restricted digital data.

Transfer Rate

The recommended value is 64 kbps.

Default: 64 kbps

This parameter sets the transfer rate for B channels. The throughput is specified in bits per second for circuit-mode and packets per second for packet-mode service.

Destination Number Type

Valid values are national, international, local, overlap, and en bloc.

Default: national

This parameter sets the destination number type. The number type identifies how the ISDN number is sent to the called ISDN device.

Using overlap, an ISDN terminal sends the called party's ISDN number in separate messages, one digit at a time.

En bloc enables an ISDN terminal to send the called party's ISDN number in the single SETUP message.

Destination Number Plan

Valid values are telephony, isdn, private, and unknown.

Default: telephony

This parameter sets the destination number plan and specifies network addressing.

A telephone number is nothing more than the address of a device attached to the telephone network. For ISDN applications, several different forms of addressing are important, namely, the telephone numbering plan that exists today and the numbering plan for the ISDN era.

Facility Coding Value

Valid values are megacom, sdn, megacom800, wats, tie, accunet, long, int800, catsc, and multiquest.

Default: megacom

This parameter sets the facility coding.

Bearer Capability Value

Valid values are default, G711ULAW, G711ALAW, G721ADCPM, G722F725, H261, NONITTV120, CCITTV120, CCITTV120, and CCITTX31.

Default value: default

This parameter sets the bearer capability. This parameter is similar to the transfer capability, but it can also specify the type of speech, encoding, and so on.

For example, if you select the transfer capability as 3.1 KHzAudio, you can enhance this feature by specifying the service as G711ULAW or G711ALAW. This identifies the associated compounding algorithm (that is, mu-law or A-law).

Chapter 4: Installation

Before installing this option, your MRS system must have MRS version 3.02.02 installed. This chapter includes the following procedures for installing the MRS Version 3.02 North American PRI ISDN option:

- 1 “Installing the North American PRI ISDN option hardware” on page 4-1
- 2 “Installing the North American PRI ISDN option software” on page 4-4
- 3 “Activating the North American ISDN PRI option” on page 4-11
- 4 “Configuring the North American ISDN PRI option” on page 4-12

Installing the North American PRI ISDN option hardware

You can install up to two D/240SC-T1 modules in an MRS, or up to four D/240SC-T1 modules in an MRS/AP, to support PRI ISDN.

Procedure 4-1: Installing the North American PRI ISDN option hardware

- 1 Shut down the MRS system as described in the appropriate MRS system product manual.
- 2 Once the shutdown process is complete, turn off the power to the system.

- 3 Wear an antistatic wrist band when handling the option cards. Unpack the North American PRI ISDN option card(s) and remove them from the antistatic bag.



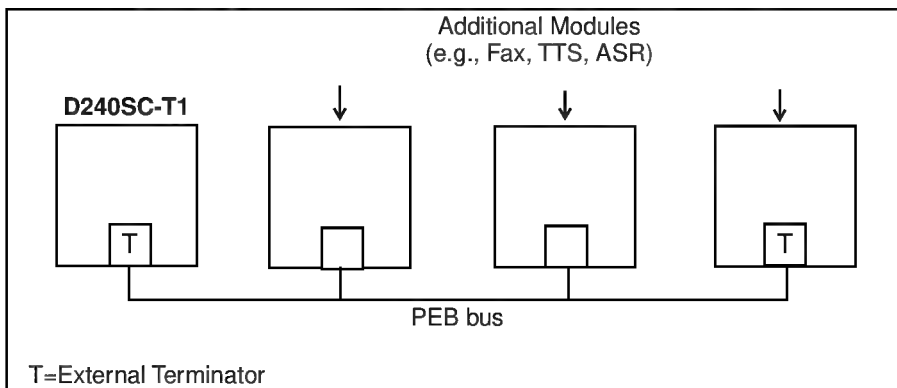
CAUTION

Risk of equipment damage

Always observe proper precautions when working with the system. Be sure to follow all applicable Electrostatic Discharge (ESD) guidelines during configuration and installation of the option cards.

- 4 Configure the North American PRI ISDN option card(s) as shown on the configuration drawings in Appendix B. The North American PRI ISDN card(s) must be installed at the end of the PEB or PEBs (Figure 4-1 illustrates installation of the D240SC-T1 card on the PEB). The illustration and table in Appendix B illustrate proper I/O Addressing, Board Operation, and Hardware Interrupt settings. Please read the notes that follow the table.

Figure 4-1: Attaching the D240SC-T1 Card to the PEB



- 5 Open the system and find an open slot where you can install the North American PRI ISDN option card. Follow the recommendations in Step 4.
- 6 Remove the PEB cable from the Dialogic cards that will be connected to the North American PRI ISDN option card(s).

- 7** Slide the North American PRI ISDN option card(s) into the system. Do not screw the card(s) in yet.
- 8** Reconnect all the cards together with the PEB cable. You may need to lift some cards from their slots to attach the PEB cable.
- 9** Make sure that the card(s) are properly seated and aligned before installing the card-retaining screws. Install and secure the card-retaining screws.
- 10** Power up the system and allow it to boot normally. When the READY light on the front panel stops flashing, the hardware installation of the North American PRI ISDN option is complete. (If the READY light does not stop flashing, contact your customer service representative.)

Installing the North American PRI ISDN option software

The procedure in this section installs

- MRS Version 3.02.01 ISDN Base Package #1 For Unix SVR 3.2
- the firmware disk for each supported switch:
 - AT&T - 4ESS, 5ESS
 - Nortel - DMS/250, DMS/100
 - NTT - INS1500
- MRS Version 3.02.00 PRI ISDN Signaling Option

ATTENTION

Nortel recommends that you install all of the supported switch firmware diskettes.

Procedure 4-2: Installing the North American PRI ISDN option software

- 1 Log in to the MRS or MRS/AP as **root** (refer to Appendix A for detailed instructions on logging in and accessing the SCI).
- 2 At the `/sci>` prompt, type **install** and press **<Enter>**.

A warning message appears on the screen:

```
*****
WARNING - Executing this option will cause the system to
be
        stopped.  Once the Install Menu is entered the
only
        way to restart operations will be to reboot the
VRU.
*****
*****
```


A prompt then appears asking if you want to continue.

Are you sure you wish to continue?

Current continue = no

yes - Continue with operation.

no - Return to the previous menu.

Continue? =

ATTENTION

The installation script suspends all MRS processes and then displays the /sci/install> prompt.

- 3 Enter **y** and press **<Enter>** to continue with the installation.

The following messages are displayed:

Stopping the System Now!

.

. (various messages)

.

/sci/install>

- 4 Wait until the Ready light on the front panel of the MRS begins flashing before continuing. This step ensures that all MRS processes were stopped. On the MRS/AP there is no Ready light to observe (just proceed to the next step).

- 5 At the /sci/install> prompt, type **package** and press **<Enter>**.

The following prompt is displayed:

Insert the floppy - type q to quit or hit ENTER to continue:

- 6 Insert the MRS Version 3.02.01 ISDN Base Package #1 For Unix SVR 3.2 diskette into the floppy disk drive and press **<Enter>**.

Note: You must install this diskette first, before the other diskettes in the media package.

The following messages are displayed:

```
Searching for the Size File
.
.
.
Install in progress
.
. (various messages)
.
Press return to continue ...
```

- 7 Press **<Enter>**.

The system prompts:

```
Do you wish to edit your existing config file [yn] ?
```

- 8 Type **n** and press **<Enter>**.

The system prompts:

```
Do you wish to edit your existing configuration file
[yn] ?
```

- 9 Type **n** and press **<Enter>**.

ATTENTION

Some of the steps in this installation procedure may appear to be repetitive. The reason for this is that there are several configuration files included with this software. Please follow the steps.

The system prompts:

```
Do you wish to use the default parameters [yn] ?
```

- 10** Type **y** and press **<Enter>**.
The following prompt is displayed:
Press return to continue ...
- 11** Press **<Enter>** to continue.
The system prompts:
Do you wish to edit your existing configuration file
[yn] ?
- 12** Enter **n** and press **<Enter>**.
The following prompt is displayed:
Press return to continue ...
- 13** Press **<Enter>** to continue.
You are placed into a vi file.
- 14** Enter **:q!** and press **<Enter>** to quit the vi editor and return to the installation procedure.
The system displays this prompt:
Do you wish to edit your existing configuration file
[yn] ?
- 15** Enter **n** and press **<Enter>**.
The following prompt is displayed:
Press return to continue ...
- 16** Press **<Enter>** to continue.
- 17** The system displays this prompt:
Enter the number of channels to be used in the
system: [0-128]

Since each D/240SC-T1 module supports 24 channels, multiply 24
times the number of modules in your system. For example, if you have
four D/240SC-T1 cards, type **96** (4*24) and press **<Enter>**.

- 18** Enter the number of channels and press **<Enter>**.
The system displays this prompt:
Do you wish to [c]ontinue, [r]edo, or [a]bort?
[cra]?
- 19** Enter **c** and press **<Enter>**.
The following is displayed:
Setting parameters
.
.
.
Press return to continue ...
- 20** Press **<Enter>**.
The following is displayed:
Do you wish to build a kernel now [yn] ?
- 21** Enter **y** and press **<Enter>**.
The following is displayed:
The UNIX Operating System will now be rebuilt.
This will take a few minutes. Please wait.

Root for this system build is /.
.
. (wait)
.
The UNIX kernel has been rebuilt.

Do you want this kernel to boot by default? (y/n)
- 22** Enter **y** and press **<Enter>**.
Several messages are displayed, followed by this prompt:
Do you want the kernel environment rebuilt? (y/n)
- 23** Enter **y** and press **<Enter>**.
The following is displayed:
Press return to continue ...

- 24 Press **<Enter>**.

The system displays this prompt:

Would you like to view the release notes [yn] ?

- 25 Enter **n** and press **<Enter>**.

The following is displayed:

Press return to continue ...

- 26 Press **<Enter>**.

The system displays this prompt:

Do you wish to install firmware file now [yn] ?

- 27 Enter **y** and press **<Enter>**.

The system displays this prompt:

Insert new firmware Diskette now [yn] ?

- 28 Insert a switch firmware diskette into the floppy drive and enter **y** and press **<Enter>**.

ATTENTION

Nortel recommends that you load all of the supported switch firmware diskettes. No specific order of installation is required.

Each time the system redisplay this prompt, insert the next switch firmware diskette into the floppy drive, enter **y** and press **<Enter>**. Once you have loaded the last switch firmware diskette, at this same prompt, enter **n** and press **<Enter>**.

The switch firmware diskettes are listed below:

Diskette name	Number of disks
MRS Version 3.02 PRI ISDN NTT Protocol	1
MRS Version 3.02 PRI ISDN DMS Protocol	1

Diskette name	Number of disks
MRS Version 3.02 PRI ISDN 4ESS Protocol	1
MRS Version 3.02 PRI ISDN 5ESS Protocol	1

- 29** When the `/sci/install>` prompt is displayed, insert the MRS Version 3.02.00 PRI ISDN Signaling Option diskette into the floppy drive. Then type **package** and press **<Enter>**.
- The system displays various messages as the installation progresses but requires no further user input.*
- 30** When the `/sci/install>` prompt is displayed, remove the diskette from the floppy disk drive.
- 31** Run the Nortel customization script (refer to the section “Nortel Customization Procedure” in Chapter 6 of the *Nortel IVR 2.5/S Product Overview Guide*).
- 32** Return to the `/sci/install>` prompt. Then type **restart** and press **<Enter>**.
- 33** The system verifies the integrity of the newly installed packages, and informs you of any inconsistencies.
- 34** The MRS starts shutting down. The system will automatically reboot once it reaches the shutdown state.
- 35** Allow the system to boot up normally. It takes several minutes.

Activating the North American ISDN PRI option

After the North American ISDN PRI option components (hardware and software) are installed, the option must be activated. Contact your Nortel service provider for assistance. Make sure the modem is connected to the system for remote login, as described in Appendix A.

Table 4-1 lists the parameters that can be set for the D/240SC-pri board type.

Table 4-1: D/240SC-pri trunk type parameters

Trunk Board Parameters	Valid Values
switch type	4ESS ^a (AT&T) 5ESS (AT&T) DMS/100 (Nortel) DMS/250 (Nortel) INS1500 (NTT)
base RAM address	0xD0000
board locator address	0x0

a. 4ESS is the default.

Configuring the North American ISDN PRI option

After the North American ISDN PRI option is activated, you can configure it for your particular needs by accessing the **prispan** option from the `/sci/config` menu.

When you select the **prispan** option, the SCI prompts you to specify the PRI span (1-4) to be configured. Each span supports 24 channels. For example, for a system with 48 channels, the valid values are 1 or 2. PRI span 1 corresponds to PRI channels 0-22 (channel 23 is used for control). Once you select the PRI span, the SCI displays the `/sci/config/prispan` menu.

Select the **edit** option from the `/sci/config/prispan` menu to modify the current parameter values. The following example modifies the parameters for PRI span 1.

```
/sci/config> prispan
Please enter the PRI span to edit = 1
edit - Modify parameters for this PRI span.
list - List parameters for this PRI span
done - Cancel this operation.
/sci/config/prispan> edit
Current Switch type = 4ESS
4ESS      - 4ESS Switch
5ESS      - 5ESS Switch
DMS        - DMS/250 or DMS/100 Switch
NTT        - NTT (INS1500) Switch
NT         - Network Termination
default    - 4ESS Switch
Switch type =
Current Transfer Capability = speech
speech     - Speech Bearer Capability.
udigital   - Unrestricted Digital Capability.
rdigital    - Restricted Digital Capability.
3.1KHzAudio- 3.1KHz Audio Capability.
7KHzAudio  - 7KHz Audio Capability.
video      - Video Capability.
default    - Speech Bearer Capability
Transfer Capability = speech
Current Transfer Mode = circuit
circuit     - info transfer mode - circuit mode.
packet      - info transfer mode - packet mode.
default     - info transfer mode - circuit mode.
Transfer Mode =
```



```

Current Transfer rate = 64KBPS
64KBPS    - B_CHANNEL_UNITS 1X64.
128KBPS   - Non-standard 2X64.
384KBPS   - H0_CHANNEL_UNITS 6X64.
1536KBPS  - H11_CHANNEL_UNITS 24X64.
1920KBPS  - H12_CHANNEL_UNITS 30X64.
default   - B_CHANNEL_UNITS 1X64.

    Transfer rate =
Current Destination Number Type = national
national  - National number.
international- International number.
local     - Local number.
overlap   - Number is sent overlap.
en-bloc   - Number is sent en-bloc
default   - National number.

    Destination Number Type =
Current Destination Number Plan = telephony
telephony - Telephony numb. plan E.163.
isdn      - ISDN numb. plan E.164.
private   - Private numbering plan.
unknown   - Unknown plan.
default   - Telephony numb. plan E.163.

    Destination Number Plan =
Current Facility Coding Value = megacom
megacom   - Service coding - MEGACOM.
sdn       - facility coding - SDN.
megacom800- facility coding - MEGACOM 800.
wats      - facility coding - WATS.
tie       - facility coding - TIE.
accunet   - facility coding - ACCUNET.
long      - facility coding - Long distance.
int800    - facility coding - International 800.
catasc    - facility coding - CA TSC.
multiquest - facility coding - ATT MultiQuest.
default   - Service coding - MEGACOM.

    Facility Coding Value =
Current Bearer Capability Value = default
default   - User info layer 1 - Default Value
G711ULAW - User info layer 1 - G.711 u-law
G711ALAW - User info layer 1 - G.711 A-law
G721ADCPM - User info layer 1 - G.721 ADCPM
G722F725 - User info layer 1 - G.722 and G.725
H261     - User info layer 1 - H.261
NONCCITT - User info layer 1 - non-CCITT

```

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```
CCITTV120 - User info layer 1 - CCITT V.120
CCITTX31  - User info layer 1 - CCITT X.31
default   - User info layer 1 - Default Value
           Bearer Capability Value =
/sci/config>
```

Appendix A: Accessing the Service Console Interface

You can access the Service Console Interface (SCI) from a dumb terminal, a modem through an RS-232-C, or using telnet across a LAN.

See the following sections:

- “Using a terminal to access the SCI” on page A-2
- “Using a modem to access the SCI” on page A-3
- “Using the LAN to access the SCI” on page A-5
- “Accessing the SCI on an MRS/AP” on page A-6

Using a terminal to access the SCI

The “terminal” method is used only on an MRS/Rack or MRS/Tower. To use a terminal to access the SCI, follow these steps:

- 1 Connect a video terminal to the MRS system port B using an appropriate RS-232 cable.
- 2 Set the terminal parameters as follows:

baud rate 9600
duplex Full
data bits 7
stop bits 1
parity even
add LF off
- 3 Press **<Enter>** and the following message should display:

```
<system name>  
MRS Service Access Port            Revision 3.02  
Copyright 1991-1996, Nortel. All Rights Reserved  
login:
```

- 4 At the `login:` prompt, enter the appropriate account name. The default passwords for these accounts are as follows:

Account	Password	Used by
root	profile	Trained Service Personnel
service	access	Trained Service Personnel
admin	supervise	Site Administrators
user	nortel	Routine Maintenance

- 5 After you log in, the system prompts you for your terminal type. If the default terminal type displayed is correct, press **<Enter>**; otherwise, type in the correct terminal type.

Once this is completed, the SCI menu is displayed, followed by the `/sci>` prompt.

Using a modem to access the SCI

In North America, a modem that supports a 9600 kbps baud rate is shipped with every MRS system. Outside North America, a Nortel-recommended modem is provided by the distributor or customer. This modem must be connected to the MRS system when the system is installed.

ATTENTION

No modem should be connected to the MRS other than the one shipped with the system from the factory or provided by the distributor or customer at installation. Unless a local terminal is connected for a short period of time to perform local diagnostics or maintenance, the modem should not be disconnected from the MRS.

To use a modem to access the SCI, follow these steps:

- 1 Connect the modem to the MRS port B using a standard MRS-to-modem cable.
- 2 Set the terminal parameters as follows:

baud rate	9600
duplex	Full
data bits	7
stop bits	1
parity	even
add LF	off
- 3 From the remote location, dial in to the modem and wait for an answer. Once the modem is connected, press **<Enter>**. The following message should display:

<system name>

MRS Service Access Port Revision 3.02
Copyright 1991-1996, Nortel. All Rights Reserved
login:

A-4 Accessing the Service Console Interface

- 4 At the `login:` prompt, enter the appropriate account name. The default passwords for these accounts are as follows:

Account	Password	Used by
root	profile	Trained Service Personnel
service	access	Trained Service Personnel
admin	supervise	Site Administrators
user	nortel	Routine Maintenance

- 5 After you log in, the system prompts you for your terminal type. If the default terminal type displayed is correct, press **<Enter>**; otherwise, type in the correct terminal type.

Once this is completed, the SCI menu is displayed, followed by the `/sci>` prompt.

Note: On an MRS/AP, if you log in as root a # prompt is displayed. At the # prompt, type `/usr/vrs/tools/sci -b /usr/vrs` and press **<Enter>** to access the SCI menu.

Using the LAN to access the SCI

To access an MRS across a LAN, the MRS must be connected to either an Ethernet or Token Ring network, and the host that will access the MRS must support TCP/IP and telnet (or rlogin).

To access the SCI, follow these steps:

- 1 At the host command line, enter the command: **telnet 128.1.1.111**

Note 1: If the Internet address for your MRS has been changed, enter the correct Internet address instead of the default address shown. This address is noted on your equipment list.

Note 2: If the host is an X Window-based UNIX workstation, Nortel recommends that this command be issued from an xterm window.

- 2 Once the session is connected, the following message should display:

login:

- 3 At the `login:` prompt, enter the appropriate account name. The default passwords for these accounts are as follows:

Account	Password	Used by
root	profile	Trained Service Personnel
service	access	Trained Service Personnel
admin	supervise	Site Administrators
user	nortel	Routine Maintenance

- 4 After you log in, the system prompts you for your terminal type. If the default terminal type displayed is correct, press **<Enter>**; otherwise, type in the correct terminal type.

Once this is completed, the SCI menu is displayed, followed by the `/sci>` prompt.

Note: On an MRS/AP, if you log in as root a # prompt is displayed. At the # prompt, type `/usr/vrs/tools/sci -b /usr/vrs` and press **<Enter>** to access the SCI menu.

Accessing the SCI on an MRS/AP

The modem method (page A-3) and the telnet method (page A-5) can be used to access the SCI on an MRS/AP.

Also, if you have direct access to the console of the MRS/AP system, you can log in and access the SCI using these steps:

- 1 Press the <ALT>, <CNTRL>, and <F1> keys to access the command-line screen.
- 2 At the `login:` prompt, enter the appropriate account name. The default passwords for these accounts are as follows:

Account	Password	Used by
root	profile	Trained Service Personnel
service	access	Trained Service Personnel
admin	supervise	Site Administrators
user	nortel	Routine Maintenance

- 3 After you log in, the system prompts you for your terminal type. If the default terminal type displayed is correct, press <Enter>; otherwise, type in the correct terminal type.

Note: If you log in as root a # prompt is displayed. At the # prompt, type `/usr/vrs/tools/sci -b /usr/vrs` and press <Enter> to access the SCI menu.

Appendix B: Board configuration

The D/240SC-T1 board

Figure B-1: 24-Port Voice Processing and T-1 board from Dialogic

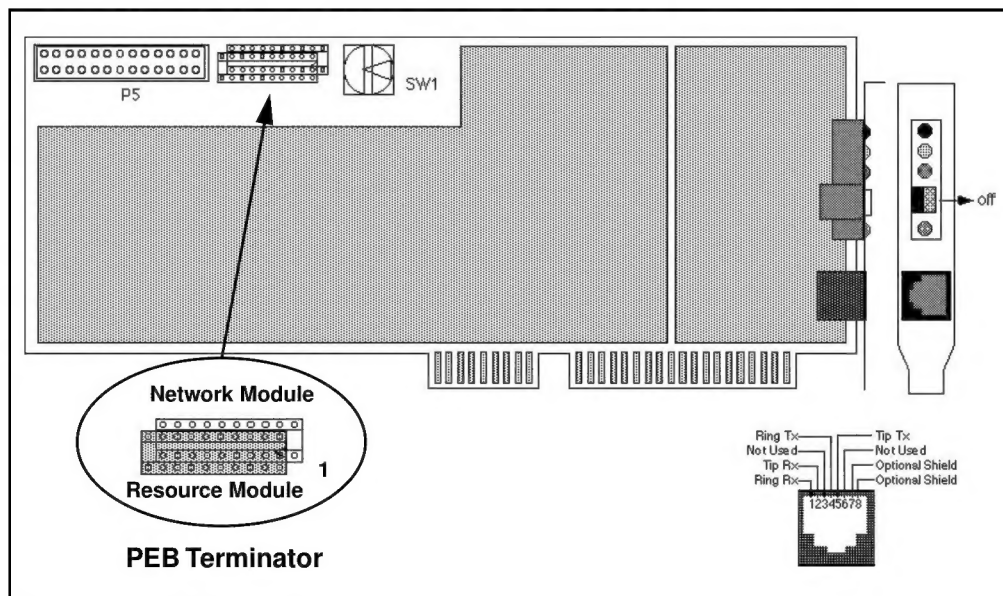


Table B-1: Switch settings

Card #	SW1	I/O Address
1	0	D00000-D5FFF
2	1	D00000-D5FFF
3	2	D00000-D5FFF
4	3	D00000-D5FFF
5	4	D00000-D5FFF

Installation notes

- 1** You must terminate the PCM Expansion Bus at both ends to ensure proper electrical characteristics.
- 2** Switch SW1 uniquely identifies the D/240SC-T1 card's location in the system and must be set according to Table B-1.
- 3** When the loopback switch is in the ON position (to the left), the red loopback indicator illuminates and the unit retransmits any data transmitted to it.

Nortel IVR 2.5/S

North American ISDN PRI Guide

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Product release:	2.5/S
Document release:	Standard 1.0
Date:	July 1997

Printed in the United States of America

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